

## Interdisciplinary perspectives on conservation and culture

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### Abstract

This article describes conservation and cultural perspectives from various disciplines based on research from various disciplines. The description is categorized into three parts; conservation and culture of applied science and health, conservation and culture of social science and humanity, conservation and culture of business and entrepreneurship. Natural sciences, health, social humanities, business, and entrepreneurship have all contributed to the conservation of natural resources and the environment, according to the results of journal article searches. Conservation in applied science promotes environmental, water, agricultural, biodiversity, and wildlife conservation, as well as land preservation and building reuse. Conservation can be accomplished through management and strategies derived from indigenous peoples' traditions with implications for nature conservation. The use of environmentally friendly health infrastructure is part of conservation in the health sector. Conservation is the study of the relationship between human interaction and the environment in a society in order to achieve a better life in the field of social sciences and humanities. Conservation strategy, policy, and education are important studies on conservation issues in the social sciences and humanities. Furthermore, conservation strategies are critical for identifying efficiency and conservation in support of development integration and disaster mitigation. Conservation and local wisdom-based education is a learning process that aims to raise environmental and cultural awareness and concern. In particular, conservation and local wisdom-based entrepreneurship education is a promising topic to be studied and researched further to generate various businesses that support environmental and cultural preservation.

**Keywords:** Conservation; Culture; Entrepreneurship; Health; Social science and humanity

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## INTRODUCTION

Conservation keywords can be easily found using various scientific search platforms. From the 1800s to the present, conservation publications have come a long way. These conservation topics include conservation of force (Professor Faraday, 1859; Youmans, 1868), conservation of energy (Atwater & Rosa, 1899b, 1899a; Colding, 1864; Mach, 1894; Weber, 1872; Babcock & Wikström, 1992; Costanzo et al., 1986); Abrahamse et al., 2005; Gupta & Chandra, 2002; Liu et al., 2019), conservation biology (Soulé, 1985; Rönkä, 2008; Nualart et al., 2017), and environmental conservation (Newhouse, 1990); Kueffer & Kinney, 2017; Raimi et al., 2019). Many other conservation issues have been discussed from various points of view.

The topic of conservation is often discussed and put alongside other topics, such as conservation and restoration (Dietl et al., 2015; Romañach et al., 2018; Wang et al., 2021; Arifanti et al., 2022), conservation and natural resource management (James et al., 2021), conservation and human rights (Newing & Perram, 2019), as well as development and conservation (nature-culture) (Rajangam & Sundar, 2021). Conservation and culture are also two promising research areas. The cultural context of conservation is very diverse, for example, there is the term *in vitro* culture (Ayuso et al., 2019; Radomir et al., 2023), slow food culture (Shumka et al., 2022), human culture (Wilcox et al., 2019), nonhuman culture (Shumka et al., 2022), culture of animal (Servheen & Gunther, 2022), culture of marine conservation technology (Jenkins, 2022), dan household culture (Singha & Eljamal, 2021). We

also often find the context of cultural preservation such as cultural conservation (Fekrsanati & Marçal, 2022; Dolores et al., 2021; Di Turo & Medeghini, 2021), residents' spontaneous culture conservation (Yang et al., 2022), and cultural heritage conservation (Erdem Erbas, 2018; Baglioni et al., 2021; Korro Bañuelos et al., 2021; Di Turo & Medeghini, 2021). The conservation context includes these cultural contexts.

In various disciplines, the topic of Culture has a very broad perspective. In the fields of social, humanities, and economics, for example, there are the term social culture (Capper et al., 2021; Aguilar-Rodríguez et al., 2021), educational culture (Tirri, 2022; Kryshtanovych et al., 2022), environmental culture (Kryukova et al., 2021), corporate culture (Siyal et al., 2022; Lorincová, 2022), business culture (Sánchez-Bayón et al., 2021; Mengxi, 2021; Devkota et al., 2020), entrepreneurial culture (Hassan et al., 2021; Al-Lawati et al., 2022; Liñán et al., 2022), culture and cognition (Norton, 2020; Cerulo et al., 2021; Vaisey, 2021) and many more cultural topics covered in various forms of scientific publications.

This article, in particular, describes the conservation and cultural perspectives of research conducted in various disciplines. The discussion is divided into three parts; conservation and culture of applied science and health, conservation and culture of social science and humanity, conservation and culture of business and entrepreneurship. The restrictions of this paper refer to the scope of Interdisciplinary International Journal of Conservation and Culture.

## **CONSERVATION AND CULTURE IN THE PERSPECTIVE OF APPLIED SCIENCE AND HEALTH**

Conservation in applied science has a very broad scope, reflecting the development of applied sciences such as engineering, technology, architecture, informatics, communication, automotive, transportation, business and industry, agriculture, law, and education. The number of research publications in these fields demonstrates how applied science has contributed to the conservation of natural resources and the environment. Recent research (within 2020 to 2022) such as the topics of water conservation (Crouch et al., 2020; Flores & Ghisi, 2022; Pang et al., 2020; Rodriguez-Sanchez & Sarabia-Sanchez, 2020; Zinn, 2011), conservation agriculture (Experiences & Worldwide, 2022; Fuentes-Llanillo et al., 2021; Jat et al., 2020; Shrestha et al., 2020; Somasundaram et al., 2020; Wittwer et al., 2021), environmental conservation (Du et al., 2020; Little et al., 2020; Mahamadsaidovich, 2021; Truong & Clayton, 2020), biodiversity conservation (Evans, 2021; Kowarik et al., 2020; Lau, 2020; Riva & Fahrig, 2022; Sandbrook et al., 2022; B. Taylor et al., 2020), dan wildlife conservation (Cowan et al., 2021; Edelblutte et al., 2022; Hohenlohe et al., 2021; Manfredo et al., 2020; Thondhlana et al., 2020). These topics are discussed based on various fields of knowledge.

Nature conservation carried out with the local wisdom of indigenous peoples has been systematically discussed by Abas et al. (2022) and its implications for nature conservation (Uspayanti et al., 2021) and energy self-sufficiency (Sudiasmo & Muspita, 2020). Specifically, research on local wisdom in nature conservation is such as environmental conservation by the Tengger Tribe in East Java Indonesia (Putri et al., 2022), preservation of agricultural land in Serang Village, Purbalingga Regency (Putri et al., 2022), river conservation with Grebeg Susuk Wangan in Gondang Village, Kendal Regency (Qomariah et al., 2020), land management by West Timorese farmers in (Qomariah et al., 2020). Conservation of Tor Thai Mahseer Fish in Batang Haluan River (Hendrik et al., 2021), conservation of marine resources based on local wisdom of bajo mola community in wakatobi national park (Marlina et al., 2020). In addition, there is a module designed to support the learning of plant biodiversity in the field of education (Mumpuni et al., 2022).

Resource conservation management is an important part of conservation issues, for example, a review of the involvement of local communities in nature conservation (Rampheri & Dube, 2021), research on operationalizing the vulnerability of social-ecological integration (Thiault et al., 2020), research in Fiji on the contribution of tourism-based Marine conservation agreements to natural resource management (Mangubhai et al., 2020), research on the impact of natural resource management to clarify the level and type of public goods collective action issues (Niemic et al., 2020),

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research on the ethical principles of research partnerships and transdisciplinary natural resource management science (Niemiec et al., 2020), research on the impacts of marine or coastal nature conservation activities on human well-being (Niemiec et al., 2020), discussion of the ethical principles of transdisciplinary natural resource management science and research partnerships (Niemiec et al., 2020), and evaluation of capacity development in biodiversity conservation and natural resource management (Sterling et al., 2022).

Conservation includes the protection of natural areas. The goals are diverse, including the use of habitat areas to protect Indian birds (Warudkar et al., 2022), the environmental protection area of Delta do Parnaba in Northeast Brazil for the breeding and conservation of *Eretmochelys imbricata* (Neto et al., 2021), and the identification of conservation priority areas in the Poyang Lake wetland to protect waterbird habitat (Sun et al., 2019). Other research includes area protection for biodiversity conservation, namely the translation of area-based conservation pledges (Cunningham et al., 2021) and forest degradation studies (Humayun-Bin-Akram & Masum, 2020).

Conservation can also aim to reuse buildings. There are numerous studies on the adaptive reuse of buildings, such as the natural heritage reuse model (Arfa et al., 2022), building reuse trends (Owojori et al., 2021), and requirement criteria (Farjami & Türker, 2021) and evaluation (Fadaei et al., 2021). The use of such buildings can be for education (Fadaei et al., 2021) and healthcare (Diana et al., 2022).

Various technologies are used to support conservation efforts. Studies and explorations on the principles of using socially responsible conservation technology (Sandbrook et al., 2021) and Digital Image Analysis for Diagnosing the Preservation Status of Painting Cultural Heritage (Eom & Lee, 2023) are ongoing. In particular, some of the following studies tend to focus on agricultural enabling technologies such as on Microsatellites as an economical and informative technology for conservation genetics (Hauser et al., 2021), perennial ground cover as a technology for agricultural soil conservation (Schlautman et al., 2021), and Sprayable Biodegradable Polymer Membrane for soil water conservation in agricultural systems (Braunack et al., 2021).

Research in agriculture continues to be carried out both with regard to agricultural supporting technology and based on local wisdom. Research in agriculture continues to be carried out both with regard to agricultural supporting technology and based on local wisdom, such as research on local wisdom-based agricultural development such as agricultural landscape management by farmers of Ngadas Village, Malang Regency (Utami et al., 2020), cetho indigenous community agriculture to preserve nature (Prayoga et al., 2020), wetland swamp agriculture for environmental preservation (Sakir et al., 2021). Programs to build human resources through local wisdom have been carried out such as in sustainable agriculture through the Innovative STEM Project (Chongsrid et al., 2021), increasing environmental literacy (Septiani et al., 2020b) and problem solving (Septiani et al., 2020a) through the implementation of teaching materials based on agricultural local wisdom.

In the health sector, there are studies on culture-based and transcultural midwifery and nursing services. There has been a lot of research done on midwifery workplace culture (Catling et al., 2022; Catling & Rossiter, 2020), as well as the benefits of it, like shaping the student experience (Norris & Murphy, 2020). In addition, there are safety culture topics such as exploring nurses' and midwives' perspectives on safety culture factors in a university perinatal center (Ribelièné et al., 2022), and exploring the relationship between women's safety culture, midwives' work environment, and intention to stay (Rodríguez-García et al., 2023). On transcultural issues, research was found on the use of e-learning in nursing learning (Sirilukkananan et al., 2022), as well as the use of Rasch model analysis in the development of the Chinese version of the transcultural nursing self-efficiency scale (Tian et al., 2021).

In the field of health, research such as the use of lemon leaf extract as an inhibitor of oil pipe corrosion in acidic media (Abd et al., 2023), and the use of disposal bags to dispose of residual opioids after gynecological surgery can be found as an effort to support environmental conservation (Boitano et al., 2022). In addition, one can also find environmentally friendly health support research such as green anesthesia (Reynier et al., 2021), waste disposal (Chen, 2021), carbon emission reduction

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(Dogan et al., 2022), hotel marketing (L. Wang & Wong, 2021), starch modification (Maniglia et al., 2021), vegetarian behavior (Kim et al., 2020).

The studies show that the topic of conservation and culture can be viewed through the lenses of applied science and health. These are just a few of the studies that have been published recently and there are many more articles to explore from the abundance of research in this area.

## **CONSERVATION AND CULTURE IN THE PERSPECTIVE OF SOCIAL SCIENCE AND HUMANITY**

Conservation is the study of the relationship between human interaction and the environment in a society in order to achieve a better life in the field of social sciences and humanities. Conservation strategies, policies, and education are important studies in the social sciences and humanities on conservation issues. The following describes some recent research on conservation strategies and policies and conservation-based education.

Conservation strategies are critical for identifying efficiency and conservation in order to support development integration. Conservation strategies that have been undertaken include the development of a global deep-sea monitoring and conservation strategy (Danovaro et al., 2020), a national conservation strategy for China's ecological civilization (Danovaro et al., 2020), a habitat conservation strategy along coastal settlements (Scyphers et al., 2020), and an international conservation strategy of endangered wild apple trees (Zhang et al., 2021). A conservation strategy is an approach that emphasizes the conservation of biological resources and their ecosystems to provide appropriate guidance in determining policies. Conservation policies are important and cannot be ignored (Jansen et al., 2022). Various conservation policies have been discussed with various objectives such as for conservation policies in the post-COVID-19 transition (Cooke et al., 2021), and the development of building energy conservation in China (Han et al., 2021), as well as utilization.

Conservation strategies and policies are also closely related to disaster mitigation efforts. These efforts can be carried out by involving community participation such as in soil and water conservation (Indrawati et al., 2022) and mangrove area development (Utama et al., 2022; Khakhim et al., 2021). Other efforts are made through the use of local wisdom such as the adoption of customary laws in the coastal areas of Aceh Besar (Sulaiman et al., 2021), the study of local cultural storytelling (Fakhrudin & Elmada, 2022), and the inventory of local culture as a means of learning disaster mitigation (Afrian et al., 2020).

Conservation-based education is a learning process that aims to build care and awareness of the environment, for instance, water conservation education for elementary school students can make them realize the importance of preserving water in the Nenetzingo Watershed, Mexico (Valenzuela-Morales et al., 2022). According to a review of research on the outcomes of environmental conservation education, environmental education is generally very positive and improves environmental quality (Ardoin et al., 2020; Sakurai & Uehara, 2020). The results of conservation education can build positive characters of individuals and communities who care about their environment.

A local wisdom approach can also be used to develop positive character. Character education based on local wisdom is the education of values, manners, morals, and character so that individuals can make good or bad decisions in their lives. Various learning strategies are carried out by teachers to build local culture-based characters such as online integrated character education strategies that involve parents (Ariani et al., 2022), multicultural education strategies in early childhood education (Suri & Chandra, 2021), cross-cultural strategies (Suwanda et al., 2020), and integration of flipped classroom and local cultural values in higher education (Jamaluddin & Malang, 2021).

One effort to revitalize tradition is the cultivation of positive character in local wisdom-based learning. If traditions are no longer exist in our daily lives, they will eventually become extinct. Efforts are made to anticipate these problems by conducting studies and research in cultural revitalization areas, such as research to model the spatial distribution of Amah Mutsun priority cultural plants (A. Taylor et al., 2023). The strategies that can be done for cultural revitalization are culinary tourism

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(Wondirad et al., 2021), film media (Tiwahyupriadi & Ayuningtyas, 2020) and building communities (DrSarunporn & Pongsrirojana, 2021).

The various strategies and policies to support environmental and cultural conservation that have been described are a small part of the many studies and research that have been conducted in the area of social and cultural sciences.

## **CONSERVATION AND CULTURE IN THE PERSPECTIVE OF BUSINESS AND ENTREPRENEURSHIP**

Conservation in business and entrepreneurship holds great promise for being studied. On the conservation aspect, business and entrepreneurship are part of natural resource conservation management. Various theories are discussed to support these activities such as transformative business practices for biodiversity conservation (Panwar, 2023), pro-environmental technologies as social business applications (Manika et al., 2021). However, there is a business impact on conservation as found in Sakina's (2020) research. Therefore, it is necessary to improve the character of conservation and entrepreneurship earlier for students such as research on chemistry project-based learning with an Ethno-STEM approach (Sudarmin et al., 2023).

Teachers use a variety of learning strategies to raise awareness of the importance of students having entrepreneurial character. The utilization of local wisdom potential is very diverse. This attracts teachers to implement it in classrooms with the aim of increasing interest in entrepreneurship, including the use of Gusjigang Local Wisdom in the application of a project-based learning model for grade VI students (Malitasari et al., 2022), an experiential learning model based on entrepreneurship based on local wisdom for students (Munir et al., 2021) and early childhood (Umayah & Huliyah, 2021), integrative learning based on local wisdom Jagong Maton (Puspitasari & Priatmoko, 2022), and learning with modules based on local wisdom of Madura Island (Setyo Wardhani & Mellyaning Khoiriya, 2020). Not only in formal education, students and college students, there is also empowerment of community entrepreneurship based on local wisdom for women migrant workers (Yuniriyanti et al., 2021).

The entrepreneurial spirit will encourage people to do business by utilizing the potential of local wisdom. This creates many implications, including the sustainability of tourism businesses in South Central Timor by empowering traditional weaving craftsmen (Sudarmin et al., 2023) and environmental preservation through the development of traditional woven sarong businesses (Harjanti et al., 2020). These studies need to be further developed to encourage businesses that support natural resource conservation management and cultural preservation.

## **CONCLUSION**

Research on the topic of conservation and culture that has been conducted is both monodisciplinary and interdisciplinary. Interdisciplinary research is being conducted to solve various problems to support nature and culture conservation. Conservation and culture are viewed very diversely from various scientific perspectives, such as natural sciences, health, social humanities, business, and entrepreneurship. The results show that conservation in the field of applied science has more places than other fields of science. Applied science can make a significant contribution to the preservation of natural resources and the environment. Community support based on local wisdom is a separate point in its implementation as a carrying capacity for conservation. In addition, management, strategies, policies, and education that support the preservation of nature and culture are equally important components for the implementation of a more tangible preservation of nature and culture. The use of appropriate technology is also a leverage to achieve the goal of conservation. The true role of agricultural, health, and economic researchers who support the conservation and application of local cultural values can also provide more value for the welfare of communities that are unique to each region. The development of entrepreneurial characters and business skills based on conservation and culture is another effort to advance and prosper the community.

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## Limitations and future direction

This article describes various scientific perspectives on conservation and culture. Much of the description focuses on published research from 2020 to 2022. This limitation is expected to stimulate in-depth studies on conservation from monodisciplinary, interdisciplinary and multidisciplinary perspectives.

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## Declarations

There is no conflict of interest in writing this article.

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